EXPEDITION

THE BULLETIN OF THE UNIVERSITY MUSEUM
OF THE UNIVERSITY OF PENNSYLVANIA

FALL 1958
VOLUME 1 NUMBER 1
FIFTY CENTS

(Cover) Air view of Gordion, Turkey showing the great tumulus excavated by the University Museum Expedition

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THE BULLETIN OF THE UNIVERSITY MUSEUM
OF THE UNIVERSITY OF PENNSYLVANIA

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EXPEDITION

Issued quarterly by the University Museum of the University of Pennsylvania, 33rd and Spruce Streets, Philadelphia 4. Copyright 1958. Subscription, $2.00 per year. Printed by the University of Pennsylvania: Publications, Forms, & Printing. EXPEDITION is indexed in the *Art Index*.

Editorial

FROELICH RAINEY
Director
University Museum

Expedition, a revised form of the *University Museum Bulletin,* is designed for the public. It will continue as a quarterly magazine, produced by the staff of the Museum, not only as an account of their research in archaeology and anthropology but as an expression of their ideas concerning the motive and significance of these studies in contemporary society. Today many popular books on archaeology and anthropology have reached the best-seller lists and through radio and television the studies have, for the first time, become an absorbing interest to millions. In Great Britain, particularly, this remarkable new interest in ancient tradition and history has meant that archaeological programs are now among the most popular of those broadcast by the BBC. It is in response to this new and vastly expanded public interest that we have planned a different kind of Museum publication, one which will require more thought, more skillful writing, and more concern with clear and concise accounts of the nature of our research.

Just why there should be in the mid-twentieth century this broad public interest in what was once a rather esoteric interest of antiquarians, is anyone's guess. Many of us have observed that the strong current of nationalism which runs throughout the world in our generation has been responsible for intensified archaeological research in all continents and particularly in those regions where new nations have been revived or founded. History and tradition are essential for regional loyalty and political cohesion, a human situation which most great political leaders like Kemal Pasha Ataturk have utilized to rebuild or create powerful national states. Until recently, history for most people in the world was a matter of a few centuries or, at most, one or two millennia. Now with the rapid development of prehistoric archaeology and the study of surviving primitives, human history has expanded into tens and even hundreds of thousands of years. In many regions the relation of contemporary human societies to the soil upon which they live is now known to be so ancient that a new sense of belonging in time and place reinforces written history, tradition and legend. Hence, prehistoric archaeology like history has become of national significance.

But the new nationalism cannot alone account for a world-wide interest in the epic of man's history on the earth. For some people, and perhaps for all of us, the study of the ancient past and the strange other-world of primitive peoples is an escape from the confusions and uncertainties of modern technological civilization. There is a kind of integrity in living with the past which no nation or people can afford to ignore. Human societies are inextricably bound up with the past and receive their compelling ideas from it. Men are part of a biological skin about the earth and as such are part of the body and mind of living matter. But the thing which makes them human is a third reality for which we have no better word than spirit. This peculiarly human quality running through thousands of generations of men ties them all together. Men freed of the past could be only monsters.

It seems to me that western civilization, now permeating most of human society, is based upon one all-important belief—the omnipotence of human reason. From this has developed the scientific method, the technological civilization of the twentieth century, and the immense human population of the earth. No other civilization has placed so much faith in the capabilities of the mind, removed its people so far from the natural environment of living things, and devised a way to destroy them by an act of human will. In spite of the humanism, social justice, and emphasis on the dignity of the individual, equally a part of western civilization, the technological culture which it has produced may appear to many persons a monstrous machine which is now beyond the control of individual human beings. The manipulation of natural forces in the delicate balance of living organisms can become terrifying. It may so far remove men from the community of the organic world that their self-destruction is inevitable.

Faced with the ominous possibilities of their own creation, many thoughtful people may find reassurance in an "escape" to the past, not only in the limited range of history where individual lives play a major role, but in the vast range of prehistory where mankind is the central figure of an epic. Human society and the human spirit are as ancient as human life. The omnipotence of the human mind is a theory of one brief epoch. To see our current theories and our particular culture in proportion against the background of

(Continued on page 36)

The royal grave mound from the village a quarter of a mile away.

The Gordion Tomb

Rodney S. Young

The successful search at Gordion in Turkey for the tomb of a king who reigned in the eighth century before Christ.

The Museum expedition first went to work at Gordion in 1950. Always before the eyes of its members stood the biggest of the grave mounds, some 165 feet in height and covering an area of more than 55,000 square yards, a dominant feature of the local landscape not easily overlooked. This huge artificially-heaped mound served at the same time as monument and protection over the tomb of a single person—evidently, from the size of the mound, a very important person. It had drawn archaeologists to Gordion before 1950, some of them with a predatory gleam in their eye. A German expedition spent three months in the summer of 1900 digging at Gordion; they had been drawn there in part at least by the thought of digging the great tumulus. They dug five of the smaller mounds, and made trenches on the city site; but in the end they decided that the biggest tumulus was beyond their means financially and technically.

Our own Museum expedition was not uninfluenced by the possibility of exploring this mound when it chose Gordion as the site for a long-term excavation. The digging of the city site has been most satisfactory, illustrating episodes in the history of the town, giving us some idea of the civil and military architecture of ancient Phrygia, showing methods of construction and hinting at the skill of the architects and engineers, the mosaicists and the sculptors, and supplying us liberally with the household wares and artifacts used in the town.

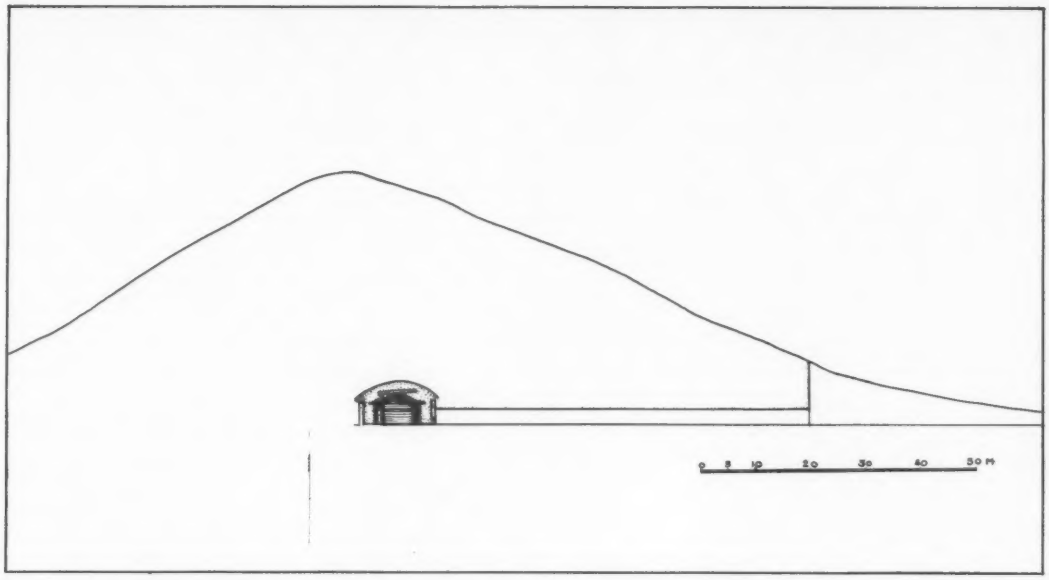
The Phrygian Kingdom fell before an invasion of Cimmerian barbarians early in the seventh century B.C.; Gordion was burned and never flourished again as the capital of a powerful and independent state. The site evidently lay abandoned until the town was rebuilt in the time of

the Persian Empire, probably as an administrative center and garrison town. But the small area of the city destroyed by the Cimmerians that has been uncovered thus far has already shown that the Phrygians had reached a far higher level of culture before the catastrophe than could ever have been anticipated from what was already known of them; and more is to come. Doubtless the Cimmerians looted the town before they burned it, carrying off everything of value to them. But the values of a predatory nomad were (we hope) different to those of a modern archaeologist or historian; a few inscribed clay tablets, which he would have considered of no worth, or some sculptured slabs which he would have found too heavy to carry off (even if he had wanted them), will give us more solid historical information than would many a portable object made of material more valuable than clay or limestone. Let him have them.

Nevertheless, the tombs at Gordion (as at any site) offer promise of a different sort: if intact and unlooted they offer objects which are complete and unbroken, instead of mere fragments; they offer the possibility of the preservation of objects made of perishable materials which would never have survived in a more exposed environment; and above all, they offer groups of objects all placed in the tomb at the same time—a closed deposit in which everything may be taken to be more or less contemporary. If the tomb is that of a king we may naturally expect objects of greater value, intrinsic, artistic, or historical. The archaeologist is able, and often is compelled, to illustrate his results with, as it were, a rag, a bone, and a hank of hair; but if the tombs are available and can be reached they are likely to contain objects much more impressively illustrative of the culture of the times, and at the same time groups of objects which may serve as checks against the results obtained by stratified digging in the settlements.

These thoughts were not absent from the heads of the excavators during the years from 1950 to 1957, when the exploration of the greatest mound was finally undertaken. A good deal of exploratory work was done, and much information was gathered. In 1950 and 1951 fourteen of the smaller grave mounds were dug, and the somewhat discouraging conclusion was forthcoming that the tomb is seldom to be found under the center of a mound. It became evident that some means must be devised for locating the position of the tomb under the greatest tumulus before an attempt could be made to reach it. Only the boldest of men would have dug down at the center of this mound, or tunnelled in directly toward the center, on faith and without any previous knowledge of where the tomb was to be sought. And in the case of the Gordion tumulus the matter was complicated by the consideration that this is the biggest tumulus in Asia Minor, a monument in itself and therefore not to be wantonly destroyed or mutilated.

The problem was considered from various angles until finally a promising solution was offered by good friends with experience in drilling for oil. A light drilling rig was procured, with which it was possible by a succession of borings to locate and map the area beneath the mound occupied by the pile of loose stones which experience had taught us to expect overlying the tomb chamber. At the same time there was no danger that the drill would go through the stone-pile to do damage within the tomb



Section through the tumulus, showing tomb chamber, tunnel, and open trench

itself. The fall of 1955 and the summer of 1956 were occupied by the drilling; the stone-pile, about 100 feet in diameter, was located just to the southwest of the center of the mound. A by-product was the excavation, in the spring of 1956, of an important child's tomb which had been located in a practice session of drilling under a smaller tumulus (P).

The general area of the tomb having been located with reasonable certainty, we were faced by the problem of how to reach it. A rough calculation showed that a trench from the top would have to be at a maximum 130 feet deep, and correspondingly wide and long; it would ruin the tumulus, and involve the moving of about 80,000 cubic yards of earth. As this prospect was too discouraging to be faced it was decided to make a tunnel aimed at the center of the stone-pile as it had been located by the drilling. An open trench was cut on the line indicated, from the edge of the mound to a point from which tunnelling was to start, a distance of about 220 feet. The outer half of this trench was entirely through filling washed down from the tumulus itself in the long course of time; the outer edge of the original mound was clearly visible in the scarp, and the ancient tumulus must have been considerably less in diameter, but notably higher, than the present one. The tunnel was made by miners imported from the Zonguldak mining district of Turkey, who brought their own foreman and a carpenter used to the installation of pit-props. As the tumulus was here entirely of hard clay a minimum of these was necessary. The miners set a noble example by working around the clock in three shifts, which astonished our local workmen; in twenty-five days they carried the tunnel in to a distance of about 230 feet, where they were stopped by a built wall of stone right across the line of tunnelling. It may be noted that in the entire length of trench and tunnel, about 450 feet, not more than ten nondescript potsherds were found; the clay filling of the mound was very clean.

The stone wall across the line of our tunnel indicated that we were near the tomb, though there was no way of knowing whether or not it was the wall of the tomb itself, in this case built of stone instead of wood. According to our computations we were well within the area of the stone-pile, and a hole made through the roof of the tunnel, letting in a shower of small stones from above, confirmed our calculations: the hole was quickly sealed off. A pit against the face of the wall showed it to go at least two courses below the top of the hardpan, and so the only possible procedure seemed to be to break a hole through the wall. This being done, a mass of small stones began to rush out—a discouraging sight, implying that the roof of the tomb was broken. Our main concern at first had been whether the tunnel would find the tomb, or come

The doorway cut through the tomb walls, showing outer and inner wooden walls, and (upper right) part of the stone enclosure wall

empty-handed out the other side of the mound. This concern was relieved by the finding of the stone wall; the next burning question was whether the tomb would be intact or whether the roof had broken, allowing an inrush of stone from above to smash and disperse the contents. When enough stone had flowed out through our opening to allow a sight of the inner face of the stone wall we were relieved to see that it was rough—evidently not a finished face such as might be expected on the walls of a royal tomb. For a whole week the rubble continued to pour down and to be carted away. At the end of this time the wall of an inner tomb structure of wooden logs had begun to appear, about six feet within the stone enclosure wall. Finally we were able to bring our tunnel in to the face of this wall. The roof of the area over the stone-pile was now visible: a domed vault of clay so hardened and compacted by pressure in the course of time that it stood of itself when the stone-pile, of which it was the mould, was withdrawn from underneath. By this time we were morally certain, from the amount of rubble we had taken out, that the roof must be intact—had it broken, a huge amount of stone would have rushed down into the tomb, leaving a void under the clay dome. Nevertheless, one more trial awaited our faith and patience: when we procured a long auger and bored through the log wall in three places, the tool in every case found more stone on the other side!

In view of these negative results there was nothing to do but cut a window through the wall big enough to show what lay within. As the auger had predicted, the window showed only more stone rubble. This time, however, we were not held long in suspense; after only about an hour enough rubble had been taken out to reveal the face of a second wooden wall, here made of nicely squared and fitted timbers rather than rough logs. The auger was at hand and bored through the wood without encountering stone at the other side; it was now certain that the tomb was intact and the roof unbroken! A small window was cut through the inner wall, big enough to insert only the head and one arm, with a flashlight. The staff took turns at looking

The author and his Turkish assistant recording and numbering bronze vessels with reference to the plan before removal

Photograph by James Whitmore, courtesy LIFE Magazine

in; the tomb was large, the atmosphere dense, the flashlight weak. Among the wonders thus seen were a chariot, and a stuffed alligator!

The tomb had been intended for a single burial, and was made without a door or other means of access. We may probably assume that the stone enclosure wall and the inner wooden chamber up to roof level were made during the lifetime of the prospective occupant. The outer wooden wall must have been made at the same time, and all the space within the enclosure filled with rubble, for the long round logs of the outer wall, piled one on top of the other, were in no way fastened together at the corners and were thus held in place only by the rubble filled in at either side. When the time came the burial was made and the grave offerings were put into the tomb from above; then the double-pitched wooden roof was put on, the great heap of stones piled over it, and the tumulus constructed over that to a height of more than 130 feet. A "raft" of long logs laid side by side in the rubble across the width of the tomb, and to its whole length, above the roof served to distribute the enormous pressure of the huge mass of stones and earth above. Its presence hints at the skill of the Phrygian engineers of the time, and to it is probably due the preservation of the tomb roof unbroken.

The chamber measured about 17 by 20 feet inside, with a north-south orientation and with a height of about 10 feet to the top of the long walls. The roof, of long squared beams, was supported on shallow triangular gables at the ends and by a similar gable at the center, carried on huge cross-beams spanning the chamber. The wood, not yet identified by a specialist, seems to be pine. The joints between the timbers of the walls are in many cases all but invisible, so nicely are the beams fitted together. The inner wall-face seems to have been finished with the adze before sanding; flaws in the timbers were neatly cut out and the cavities filled with closely fitted wooden plugs.

The dead man had been laid, head toward the east, on a great four-poster bed along the north wall of the room, its foot in the northwest corner.

Photograph by James Whitmore, courtesy LIFE Magazine

Burhan Tezcan, of the Turkish Antiquities Service and the author removing bronzes from the tomb

Inlaid wooden screen. The color contrast is of dark yew inlaid into boxwood.

Cauldron with sirens and bearded heads, on its iron ring-stand

The bed had been spread with a coverlet of many thicknesses of cloth of various colors of wool and linen. The skeleton lay extended on its back with the legs stretched out and the arms along the sides. It had evidently been dressed in a skirt of leather with a zone of studded bronze decoration above the hem, and a sleeved shirt of cloth fastened at the shoulders, elbows, and wrists by bronze fibulae or safety-pins. Professor Muzaffer Senyurek of the Ankara University has identified the skeleton as that of a male, sixty to sixty-five years of age, and of rather slight stature —his height in life was only about 5′ 2″. All the evidence—the richness of the grave offerings, the scale of the tomb itself, and the gigantic size of the mound heaped over it—suggests that this must have been a royal personage; probably a king of Phrygia who reigned in the years of its greatest prosperity, and certainly one who died and was buried before the final catastrophe of the early seventh century. If, then, the Greek tradition is correct that the famous King Midas was still on the throne at the time of the Cimmerian conquest, probability would indicate that the occupant of our tomb was his immediate predecessor, a king who reigned in the latter part of the eighth century. This dating is confirmed by some of the finds in the tomb itself, and by radiocarbon tests run on samples of the wood from its walls, which gave an age of 2700 years, or ± 743 B.C.

The furniture of the tomb in addition to the great four-poster bed consists of two elaborately inlaid wooden screens, standing against the east wall of the chamber; a most complicated table beside them, carved and inlaid and put together from multifarious pieces; and eight three-legged tables of simpler form. Of the last, one had stood by the head of the bed, five near the center of the room, and two in the southeast corner. All of the wooden tables had collapsed in the long course of time, and were found lying on the floor in pieces; in their collapse they had dumped over the floor the bronze vessels originally placed upon them. Without exception the tables were made with three legs of hard, light-colored wood, probably boxwood, bent to a curve. The tops were of a soft brown wood, not well preserved—probably a species of soft pine. The wooden screens were of light wood inlaid with dark—probably boxwood with yew inlay. They had been put together before inlaying from a number of pieces cunningly fitted and fastened by tongues and sockets, the tongues held in place by pegs run through from the front. The separate pieces were so nicely fitted that in some cases the joints were quite invisible, their presence betrayed only by the heads of the pegs to either side. The inlay was in various geometric designs, mostly elaborate variations of a swastika motif; but at the center of each screen there is a round medallion or "rose window" filled by a complicated curvilinear inlay design. Below the medallions at either side are curved inlaid pieces like the legs of the plain tables, extending to the lower corners where they end in scroll-like feet. The screens were supported at the back by single legs which prevented them from tipping over. They serve as guides in the restoration of the very similar piece found in fragments in the child's tomb in 1956. We may suppose that they could have been used as screens, or as throne-backs to lean against while seated on a portable stool or cushion placed in front.

The south end of the chamber was occupied by three large cauldrons of bronze set upon ring-bases of iron. Inside these had been placed pottery vessels containing food and drink for the dead; samples are now undergoing chemical analysis. All the pots were of plain black-polished ware without decoration, found in a sad state of decomposition probably as a result of chemical action by their contents. On the wall of one of these vases was scratched a brief alphabetical inscription, now incomplete.

The bronze cauldrons are themselves of great interest and value. One of them is adorned with two handle attachments in the form of bull heads, to which are fastened ring handles by which the vessel could be lifted. It is quite possible that this cauldron was a local product, made at Gordion. Another cauldron with bull-head attachments is known, and there are several of the bull attachments, now detached from the cauldrons they once adorned. Most of them come from the region of Lake Van and are considered the products of the local Urartian bronze-smiths; but they differ in many details of style from our Gordion cauldron, which is thus in all likelihood the product of an independent and contemporary center of bronze working. A second complete cauldron, resembling the Gordion one in details of style and probably a product of the same workshop was found at Cumae in Italy—an import from Anatolia—and is now in the museum at Copenhagen.

The second cauldron has four attachments in the form of sirens—hybrids with human heads, shoulders, and arms, and bird wings and tails. This vessel had evidently seen some use before it was placed in the tomb, for all of the handle-

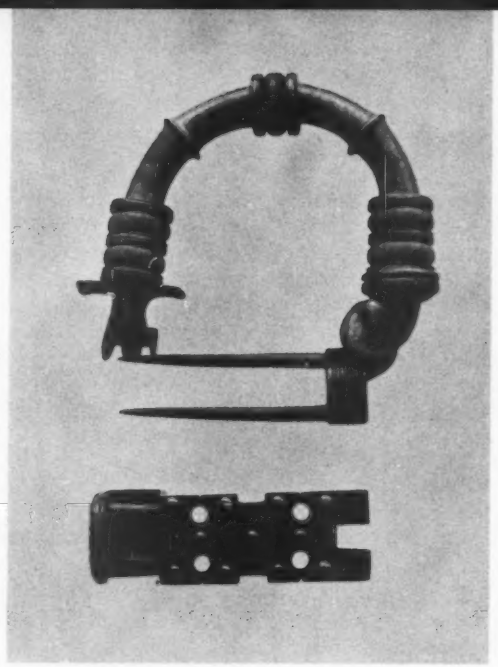
rings are missing, and two of the sirens have lost the ends of their tails. Close measurement has shown that each of the sirens was cast from a different mould; later study has brought out the personality of each figure, which differs from that of her sisters. Details of hair, sleeve- and neck-borders of dresses, and feathers of wings and tails are rendered by copious surface engraving. The siren attachments find parallels in various places, some as far distant as the Etruscan tombs in Italy; they were evidently much admired and widely imported. Imitations were soon made both in Greece and in Italy, but the local imitators made their own alterations of the types and usually a glance suffices to distinguish between the oriental importations and the local adaptations. It is not yet clear what was the original source of these siren cauldrons; they may have been Assyrian or Urartian, or possibly Phrygian.

The third cauldron combined with two normal siren attachments like those of the second, two square-bearded heads of Assyrian type which in style closely resemble small Assyrian figures of ivory of the late eighth century. Again, the source of this cauldron is not clear, though in its case Assyria seems probable.

The floor of the tomb was covered with bronze vessels, fallen from the tables when they collapsed, or from iron nails driven in evenly spaced rows into the walls when these rusted through and gave way. The table at the head of the bed had supported a linen sack filled with bronze fibulae, 145 in all, doubtless the personal jewelry of the king. Ten of these were of a heavy double-pinned type adorned with handsome and ingenious safety-catches to prevent them from opening, and to shield the sharp points of the pins. All the fibulae were of types native to Asia Minor and now almost demonstrably products of the Gordion bronze-working shops.

Very likely many of the bronze vessels were also from the same source. Altogether, there

Headboard of the bed, fallen over, the collapsed table which had stood at the head of the bed, and the linen bag of fibulae which had rested on it



(Left) Sirens from the second cauldron
(Above) Double-pinned fibula with safety catch

were 167. Of these, a hundred were rounded bowls without handles, ninety-seven of them with a raised central boss or omphalos, convenient for holding the bowl while pouring from it, the thumb over the rim and the ends of the fingers in the hollow on the under side of the boss. These were of three types: those with plain walls, those with horizontally ribbed walls, and those decorated with a characteristic petal pattern in relief. Without handles by which to hang them, all the bowls had been stacked on top of the tables in the chamber. The rest of the bronze vessels, equipped with handles, had evidently been hung from the rows of nails in the walls, but since there were six more vessels than there were nails at least that many vessels must have been laid with the bowls on the tables.

The shapes of the handled bronzes included large and small jugs with trefoil mouths for pouring; spouted jugs, the walls pierced at the points where the spouts were attached by small holes to serve as strainers; deep bowls with ring- or bucket-handles; spouted bowls and bowls with handles attached at the rim and rising above it; two ladles; and bowls with ring-handles suspended from holders in which they swivel upward or downward. Of these last there were sixteen—evidently a popular form. Other examples have been found in contemporary Phrygian tombs at Ankara and still others in Cyprus and on the west coast of Asia Minor; but as these last are all later in date than the Gordion and

Bronze omphalos bowls: three types

Bronze situla with ram's head: watercolor by Piet de Jong

Ankara bowls we take it that the type originated in Phrygia, probably at Gordion, and spread from there. Three of the ring-handled bowls from our tomb are of special interest and importance because they bear on the outer faces of their rims, close beside the handle, smears of beeswax, on the surface of which are scratched inscriptions. These are very brief and cannot for the present be read, though they are written with alphabetic letters. They are of great interest, however, as demonstrating that the Phrygians were not illiterate and had developed their own alphabetic writing on a Phoenician (and perhaps a Greek) model before the end of the eighth century.

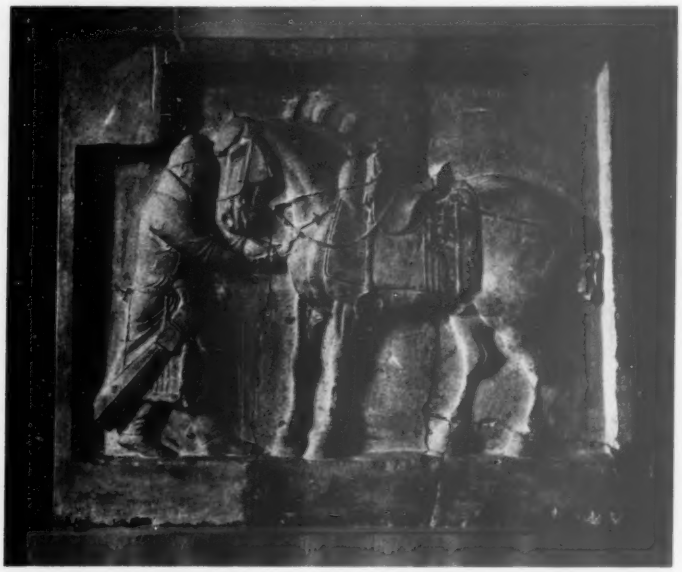
A pair of bronze vessels in the form of situlae, or deep cups with bucket-handles across the open tops, are of the first importance. Their lower ends are in the form of animal heads—one a ram, the other a lion. The second was a teaser when it was found: members of the staff could remember having seen similar vessels, lion-headed situlae, but they could not remember where, or of what date, and of course we did not have at hand a library in which to look them up. All seemed to be agreed, however, that they did not have in mind an actual vessel but rather a portrayal of one in a relief or a picture. The parallels were found only when it was possible to consult the books: lion-headed situlae of exactly the same type and very close in style, shown carried by servants in the reliefs in the palace of Sargon II, King of Assyria, at Khorsabad. Sargon was a contemporary of Phrygian Midas, and had defeated him in battle. He reigned from 722 to 705 B.C., and his palace reliefs are to be dated within those limits. The lion-headed situla thus seems to have been in fashion in the last quarter of the eighth century, and the Khorsabad parallel suggests a date for our situla which in turn suggests a date for the making of the Gordion tomb. As in the case of the siren cauldrons we can for the present only speculate as to the source of the animal-headed situlae—whether Assyrian, Urartian, or Phrygian; but we cannot go far wrong in dating our tomb about 725-700 B.C., and the dating is confirmed as well as can be by the radiocarbon tests and by the bronze fibulae which also begin to appear on oriental reliefs at about this time.

Our tomb, then, demonstrates that by the end of the eighth century the Phrygians had attained to unexpected heights of skill as architects and engineers; that they were past-masters at cabinet making, inlaying, and small woodworking; that they had a bronze-working industry which could compete with the workshops of Assyria and Urartu. They had wide connections toward the east and south, importing flax or linen thread, perhaps cotton, glass, bronzes, and vessels of faience and pottery. These objects attest wide connections and developed culture, but they cannot speak for themselves. Let us hope that future work in the city will give us some of the contemporary archives to fill in details of the picture of a people hitherto all but unknown, now shown to have been among the leaders of the civilization of their time.

How Is Your Museum I. Q.?

Which of the four identifications given for each of these pictures is correct?

Answers on page 36.

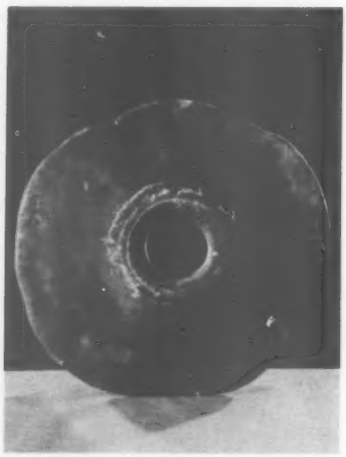


1. Stone slab made for the tomb of a famous emperor. Was he: (a) Ramses II; (b) Cyrus; (c) T'ang Tai Tsung; (d) Charles VII?

2. The person who made this pottery vessel in Peru lived about the same time as (a) Thomas Jefferson; (b) Augustus Caesar; (c) Charlemagne; (d) Magellan.

3. Mask worn by a member of a men's secret society among the (a) Iroquois Indians of New York State; (b) Alaskan Eskimo; (c) Maori of New Zealand; (d) Ngere tribes of West Africa.

4. Was this limestone statuette made in (a) Iraq in about 2500 B.C.; (b) Mexico about A.D. 100; (c) Egypt about 1200 B.C.; (d) Peru about A.D. 500?



5. Limestone disc about 20 inches in diameter from Yap in the Caroline Islands, was used as (a) a symbol of wealth; (b) the weight on a digging stick; (c) in a game; (d) the seat of a throne.

Te-moana-nui-o-Kiwa

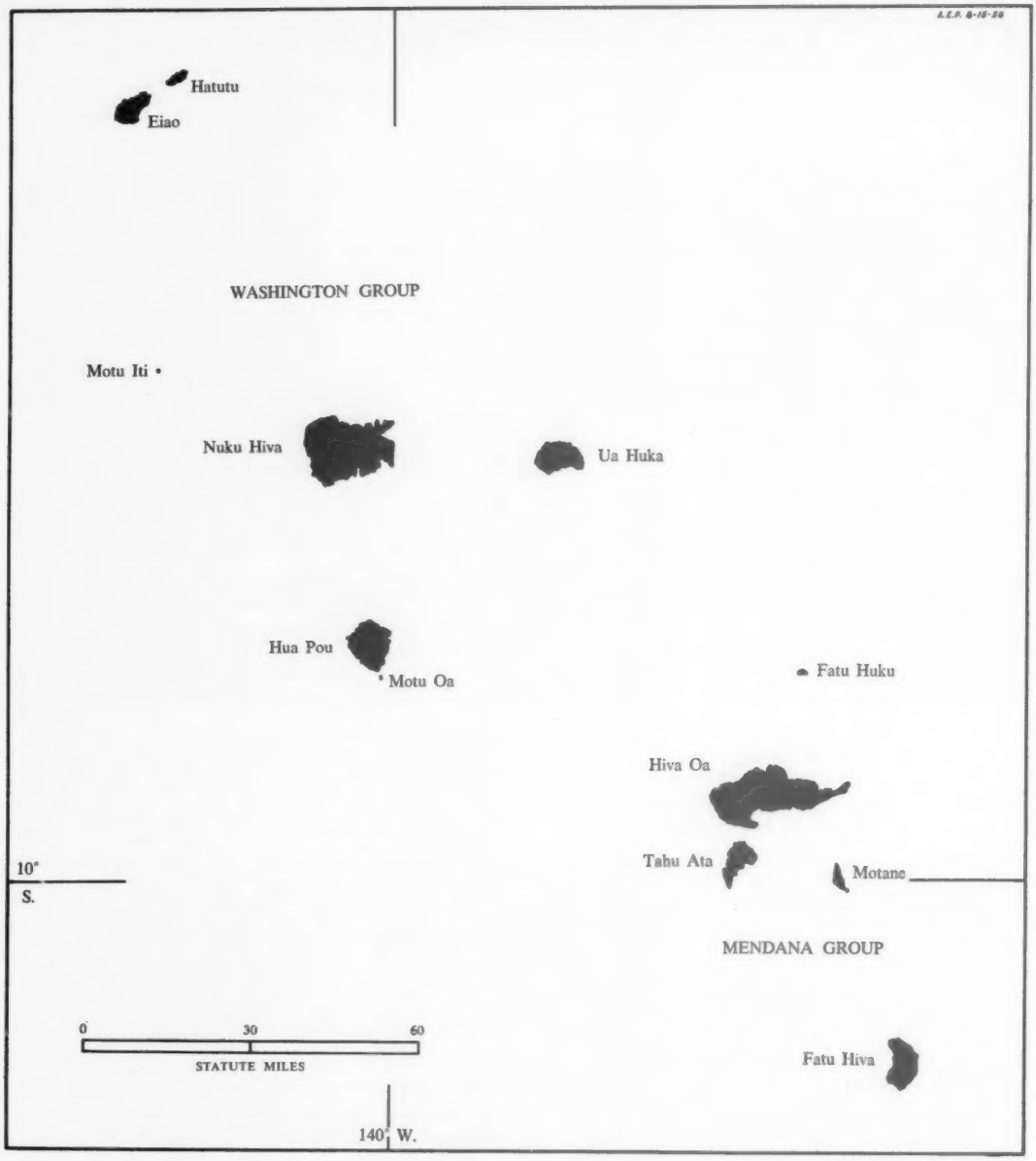
To the Polynesians the Pacific Ocean is Te-moana-nui-o-Kiwa, the great Sea of Kiwa. This article, the first of three, tells how some of its many islands were discovered and named.

Carved and painted figure from the Sepik River area of New Guinea. It is suspended from the rafters of a house and on it are hung perishable objects.

Marianne L. Stoller

For the past year one of the projects of the University Museum has been the renovation and remodelling of the South Pacific and African storerooms. With more efficient storage units, better lighting, and the installation of air filters which will prevent the accumulation of dust, it has been possible to give the collections, which are some of the best in the United States, the care they deserve and, at the same time, to provide pleasant work areas in the storerooms for the use of visiting scholars as well as the museum staff and students. To facilitate the use and study of the objects, the collections are separated into geographic and/or cultural groups. In the Pacific storerooms all the pieces from a particular island or group of islands are stored together, except where size or material makes special arrangements necessary. It was while separating them and checking their identification against the catalogue cards that I became interested in how some of the Pacific islands got—and kept—their names. This is of some significance in working with the collections.

Islands and island groups have shown a disarming tendency to change their names from time to time in the past, and this process is by no means over. It seems that every time an island group has its allegiance to a world power changed, the new possessor is liable at worst to bestow a whole set of new names on the individual islands and geographic features, or, at best, only to change the spelling of the previous names. Thus, when Germany acquired in 1884 what is sometimes called North-east New Guinea or German New Guinea they named it "Kaiser Wilhelm's Land"; it remained a German colony until World War I; in 1920 the area was awarded to Australia by the League of Nations and called the Mandated Territory of New Guinea. After World War II it became the Territory of New Guinea, under a trusteeship to Australia from the United Nations, until 1949 when it was amalgamated officially with the Territory of Papua (that is, with the southeastern portion of New Guinea, formerly called British New Guinea) and both parts are now known as the Territory of Papua and New Guinea. For several reasons, this is a rather simple example: the name New Guinea was preserved in most of the titles; New Guinea is a rather large chunk of land and consequently not easy to lose; it was of some importance economically and therefore received considerable attention from the outside world; and the name-shifting occurred in the days of good facilities for widespread communication. However, if one can't lose this large portion of New Guinea, one can get rather confused over New Guinea's largest river, the Sepik. Many different tribes live along this meandering, 700-mile long river, and some of them produce quite distinctive and pleasing carvings. In the Museum's collection of these carvings, some are reported



The Marquesas Islands

as coming from the Kaiserin Augusta River, which they did at the time they were collected, for this is what the Germans called the Sepik (or Sepic, as it is sometimes spelled).

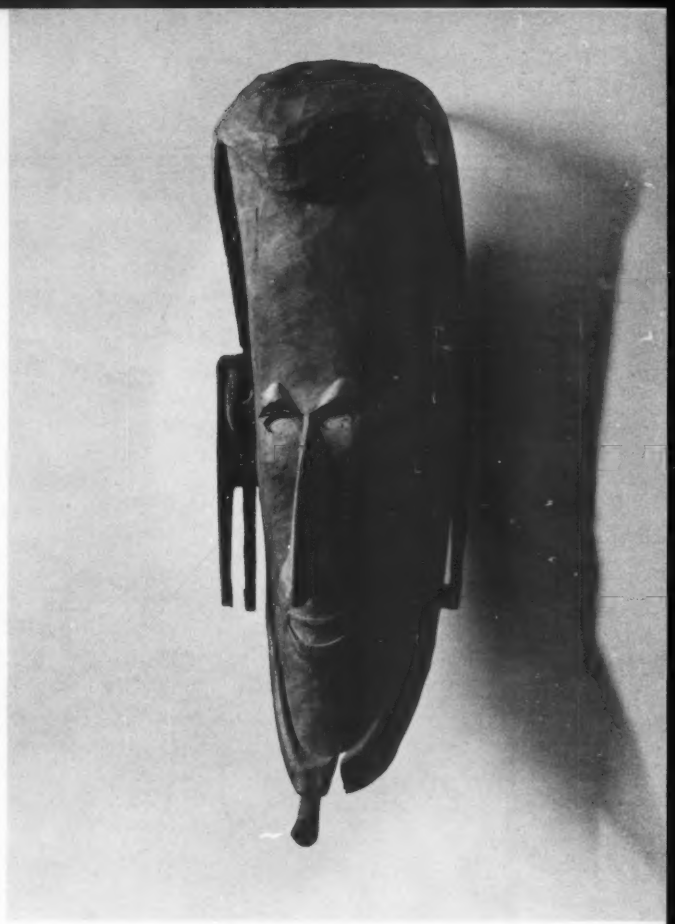
For many of the smaller Pacific islands, the reasons and history of their name-changing are not quite so easy to trace. Very often, in the early days of European exploration of the Pacific, islands were "discovered" several times and each discoverer gave the island a new name. Even if Captain A knew of Captain B's discovery he wasn't always sure it was the same island since accurate positions were hard to fix in those days. He had two choices: he could assume the island

had been discovered by B and could call it by the same name, but if it wasn't the same, and if A's position was not the same as B's, which was quite likely, then the same name had been recorded for two different islands in two different positions; or he could assume that he had discovered a new island and give it a new name, and if it happened to be the same island, it then had been reported, probably in two different positions, with two different names. To illustrate how this process of confusion works, let's follow several early European navigators through the Marquesas Islands.

The Marquesas are a group in eastern French Oceania more than seven hundred miles northeast of Tahiti, lying between 7°50′ and 10°33′ South latitude and between 138°26′ and 140°44′ West longitude. They consist of ten fairly high islands and several small islets and isolated rocks. The high islands today are usually known by their native names* and are, from north to south: Hatutu, Eiao, Nuku Hiva, Ua Huka, Hua Pou, Fatu Huku, Hiva Oa, Tahu Ata, Motane, and Fatu Hiva. On modern maps the double names are sometimes joined together in a single word, as in Tahuata and Nukuhiva; on French charts the names are usually spelled with an *o* preceding every *u*, as in Ouahouka. This latter island, Ua Huka, is also sometimes listed by another native name—Huahuna. The Marquesans are Polynesians who were quite skilled carvers of stone, wood, bone and ivory. The beauty of their islands—and of themselves—was made famous in the Western World by such writers as Robert Louis Stevenson and Herman Melville, and by the French painter Paul Gauguin who lived, died, and is buried on the island of Hiva Oa.

The Marquesas Islands have the distinction of being the first Polynesian islands of any significance to be discovered. On his second voyage in the Pacific the Spanish navigator Alvaro Mendaña de Neyra, sailing from the port of Callao with four ships, discovered, on July 21, 1595, the southernmost island, Fatu Hiva, and named it "Santa Magdalena." He went on to discover three more of the southern islands, naming them "Santa Christina" (Tahu Ata), "La Dominica" (Hiva Oa), and "San Pedro" (Motane). To the group he gave the name of

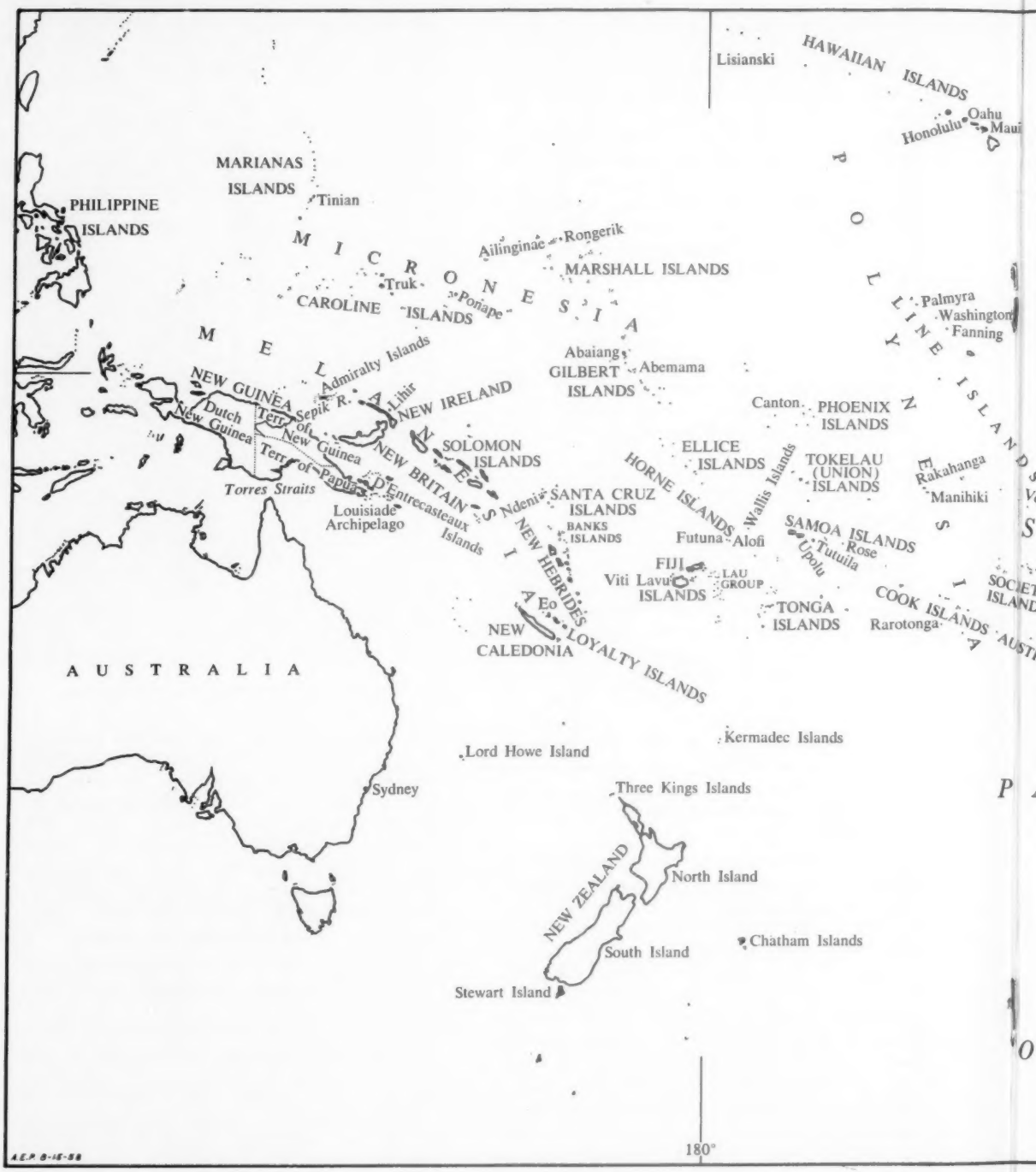
* For the names currently used for the islands I have followed the spelling on the U. S. Air Force World Aeronautical Charts, except in one or two cases of obvious errors. These are not necessarily the best authority on orthography, of course, but I prefer to use one source for the purpose of consistency.

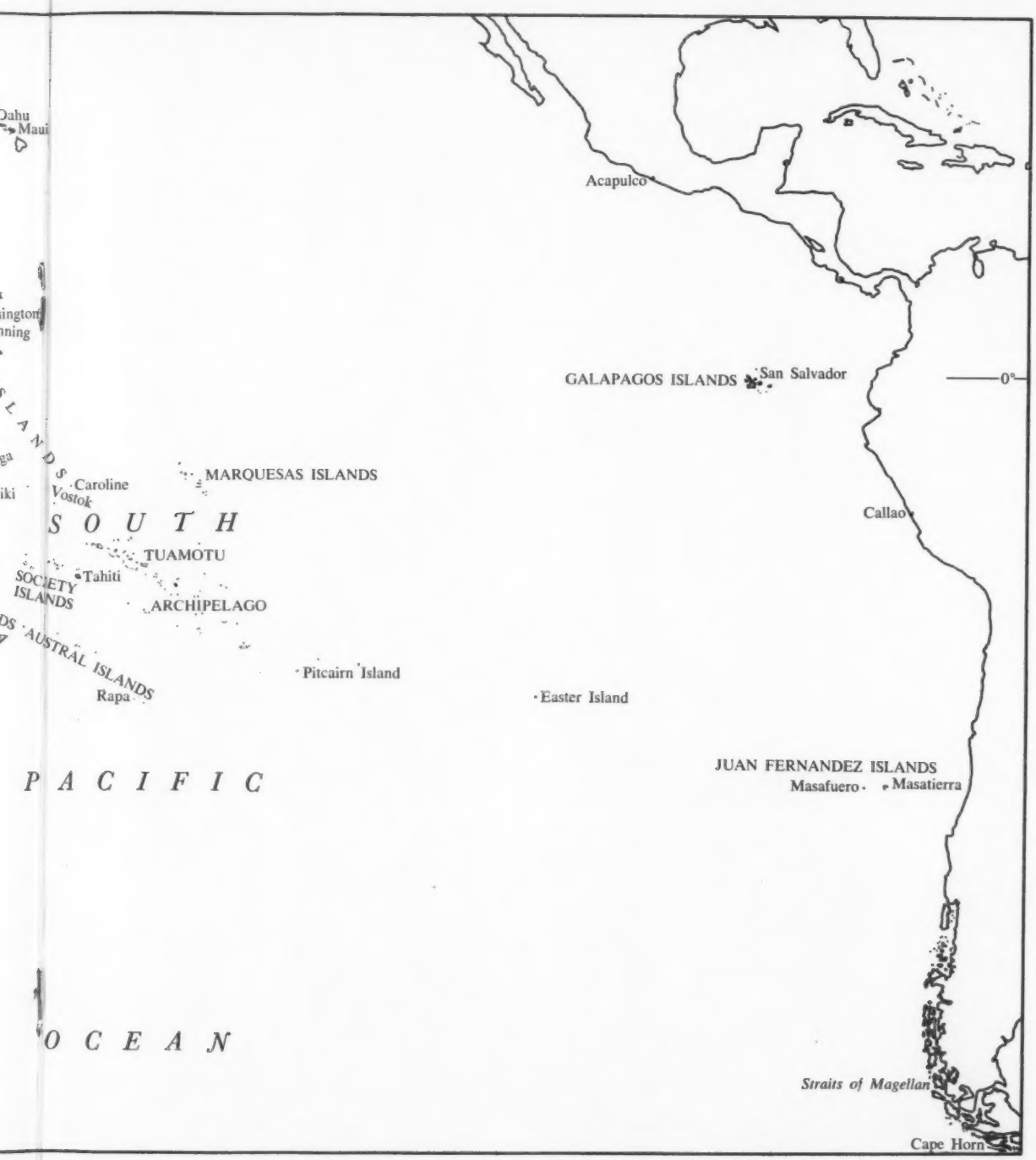


Wooden mask from the Torres Straits area

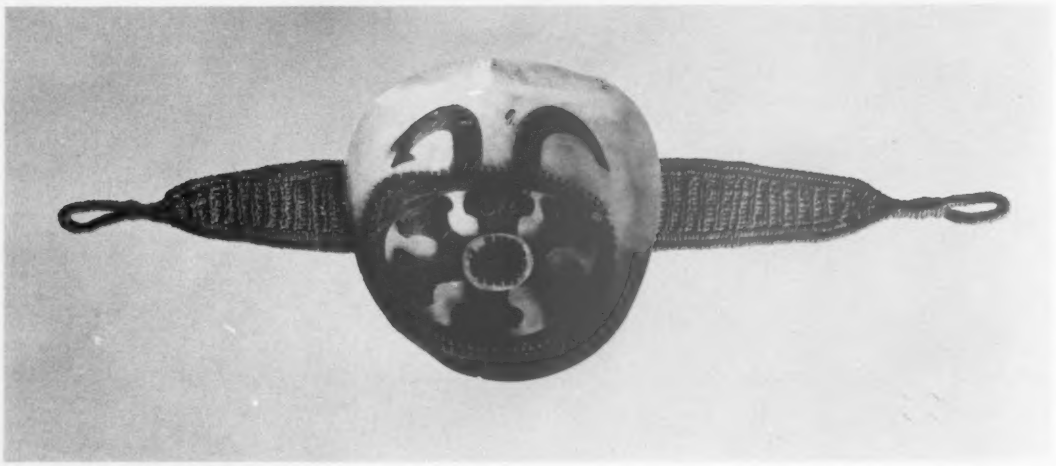
"Las Islas de Marquesas de Mendoza" in tribute to Don Garcia Hurtado de Mendoza, Marqués de Cañete, Viceroy of Peru at that time and patron of the voyage. One source claims that the group was named for the Viceroy's wife, which might be more correct grammatically. These islands, together with Fatu Huku, are now referred to collectively as the Méndaña or Southeast Group, while part of Mendaña's title—Marquesas—is applied to the whole group.

It is interesting to note that Mendaña got European-Marquesan relations off to what history has proved to be a typical start by massacring around two hundred natives on Fatu Hiva. Fate may have extracted some justice for this cruelty, however, for Mendaña sailed on across the Pacific in the same latitude and thus managed to miss discovering the other important groups in Polynesia. (This was the second time he had done this: on his first voyage, in 1567, he accomplished the remarkable feat of sailing across the south Pacific without discovering a single island in Polynesia proper!) Anyway, Mendaña did


Lisianski
HAWAIIAN ISLANDS
Honolulu
Oahu
Maui
MARIANAS ISLANDS
Tinian
PHILIPPINE ISLANDS
MICRONESIA
Ailinginae
Rongerik
MARSHALL ISLANDS
Truk
Ponape
CAROLINE ISLANDS
POLYNESIA
Palmyra
Washington
Fanning
LINE ISLANDS
MELANESIA
Admiralty Islands
Abaiang
GILBERT ISLANDS
Abemama
NEW GUINEA
Sepik R.
Lihir
NEW IRELAND
Canton
PHOENIX ISLANDS
Dutch New Guinea
Terr. of New Guinea
Terr. of Papua
Torres Straits
SOLOMON ISLANDS
ELLICE ISLANDS
TOKELAU (UNION) ISLANDS
Rakahanga
Manihiki
NEW BRITAIN
Louisiade Archipelago
D'Entrecasteaux Islands
Ndeni
SANTA CRUZ ISLANDS
HORNE ISLANDS
Wallis Islands
BANKS ISLANDS
Futuna
Alofi
SAMOA ISLANDS
Rose
Tutuila
Upolu
FIJI
Viti Lavu
ISLANDS
LAU GROUP
NEW HEBRIDES
Eo
TONGA ISLANDS
Rarotonga
COOK ISLANDS
NEW CALEDONIA
LOYALTY ISLANDS
AUSTRALIA
Kermadec Islands
Lord Howe Island
Sydney
Three Kings Islands
NEW ZEALAND
North Island
South Island
Chatham Islands
Stewart Island
180°


Acapulco
GALAPAGOS ISLANDS
San Salvador
0°
MARQUESAS ISLANDS
Caroline
Vostok
S O U T H
TUAMOTU
Tahiti
SOCIETY ISLANDS
ARCHIPELAGO
AUSTRAL ISLANDS
Rapa
Pitcairn Island
Easter Island
Callao
JUAN FERNANDEZ ISLANDS
Masafuero
Masatierra
P A C I F I C
O C E A N
Straits of Magellan
Cape Horn

(Right) "The Chief at Sta. Christina." James Cook, A Voyage towards the South Pole, and round the world . . . in the years 1772, 1773, 1774, 1775. London, 1777. (Below) Head ornament of mother-of-pearl and tortoise shell with ties of braided coconut fibre, such as the chief is wearing in the picture.



(Left) Carved wooden ornaments probably attached to the prows of Marquesas canoes. (Right) Carved wooden footrest for a dancing stilt. Marquesas Islands.

reach the island of Santa Cruz, or Ndeni in the Santa Cruz group, where he attempted to establish a colony. The attempt failed after Mendaña and forty-seven of his men died (probably from malaria); the survivors were under the nominal command of Mendaña's widow, but his pilot, Pedro Fernandez de Quiros, took charge and managed to get them to Manila. There the widow married the Governor of the Philippines, ten more men died, and four others entered monastic orders perhaps to ensure, as Peter Buck in *Explorers of the Pacific* put it, "a future less troubled than their past." Quiros himself escaped both death and religion, guided the remnants of Mendaña's expedition back to Acapulco in 1596, and lived to sail Pacific waters again in 1605 with his own expedition, and discovered several important islands in the New Hebrides group. (Just to continue the story, the commander of Quiros' second ship was Luis Vaez de Torres who, after getting separated from Quiros when they left the New Hebrides, went on to discover the strait between Australia and New Guinea which now bears his name.)

However, to return to the Marquesas Islands: Mendaña may have left bad memories behind him but time had an opportunity to ameliorate them, for it was almost two hundred years before another explorer found the group. This explorer was the most famous of all Pacific navigators, Captain James Cook. On his second voyage Cook, attempting to locate Mendaña's discoveries, found first the only island in the Southeastern Group which Mendaña had missed—the small island of Fatu Huku which Cook named Hood's Island after the midshipman who first sighted it. This was in April, 1774, and after locating all of Mendaña's islands except Fatu Hiva, and obtaining refreshments, Cook sailed on to Tahiti.

The next navigator to happen on the Marquesas was Joseph Ingraham, master of the brig *Hope*. The *Hope* was Boston-owned and had sailed from that port on September 17, 1790, on a trip around the world via Cape Horn, the northwest coast of North America, China, and eventually home around the Cape of Good Hope. In April, 1791, Ingraham sighted the Mendaña group. Five days later, on April 19th, he sailed

north-northwest from "La Dominica" (Hiva Oa) and the same day sighted two new islands: Ua Huku and Hua Pou. Ingraham must have been a patriotic man for he named Ua Huku "Washington" after the President of the United States and bestowed Vice-president Adams' name on Hua Pou. Shortly after, he saw two more islands and named them "Federal" (Nuku Hiva) and "Lincoln" (Motu Oa, a small island off Hua Pou —the Lincoln was for General Benjamin Lincoln, not Abraham). When he couldn't find a favorable place to land, Ingraham assembled his crew and proclaimed United States possession of the newly discovered islands. On April 20th they found Motu Iti (literally, a "little island") and named it "Franklin" in honor of Benjamin Franklin. Still sailing north and west they next encountered Hatutu which was awarded the name "Hancock" after the Governor of Massachusetts, and then Eiao which was named for General Henry Knox. Today this North-west group is referred to as the Washington group.

Between Mendaña, Cook, and Ingraham, all of the large islands and some of the small ones in the Marquesas had been discovered by 1791. The Mendaña group had been well verified and were known to mariners under Mendaña's names. However, news of Ingraham's discoveries didn't reach other navigators for awhile so these islands were "discovered" several times over in the next two years.

Close after Ingraham—only two months later —came the Frenchman, Captain Etienne Marchand. Marchand had heard of the rich fur trade on the northwest coast of America and persuaded some Marseilles merchants to fit a ship for him. Sailing northwest from the Mendaña group he, too, saw Ua Pou—and named it for himself. The small island off Ua Pou—Motu Oa, which Ingraham had called Lincoln—was named "Ile Plate." When Marchand saw Nuku Hiva he named it "Ile Baux," after the owners of his ship. Motu Iti (Ingraham's "Franklin") was found to be two small islands close together so Marchand dubbed them "Les Deux Frères." Sailing on, he encountered Eiao and Hatutu which he named "Masse" and "Chanal," respectively, after his two captains. One can see that Marchand's system of naming was much more personal than the patriotic Ingraham's. Because Ingraham's journal was never published (it is reported to be in the possession of the Literary and Historical Society of New England), for a long time Marchand's claim of original discovery of the northwestern islands was not questioned.

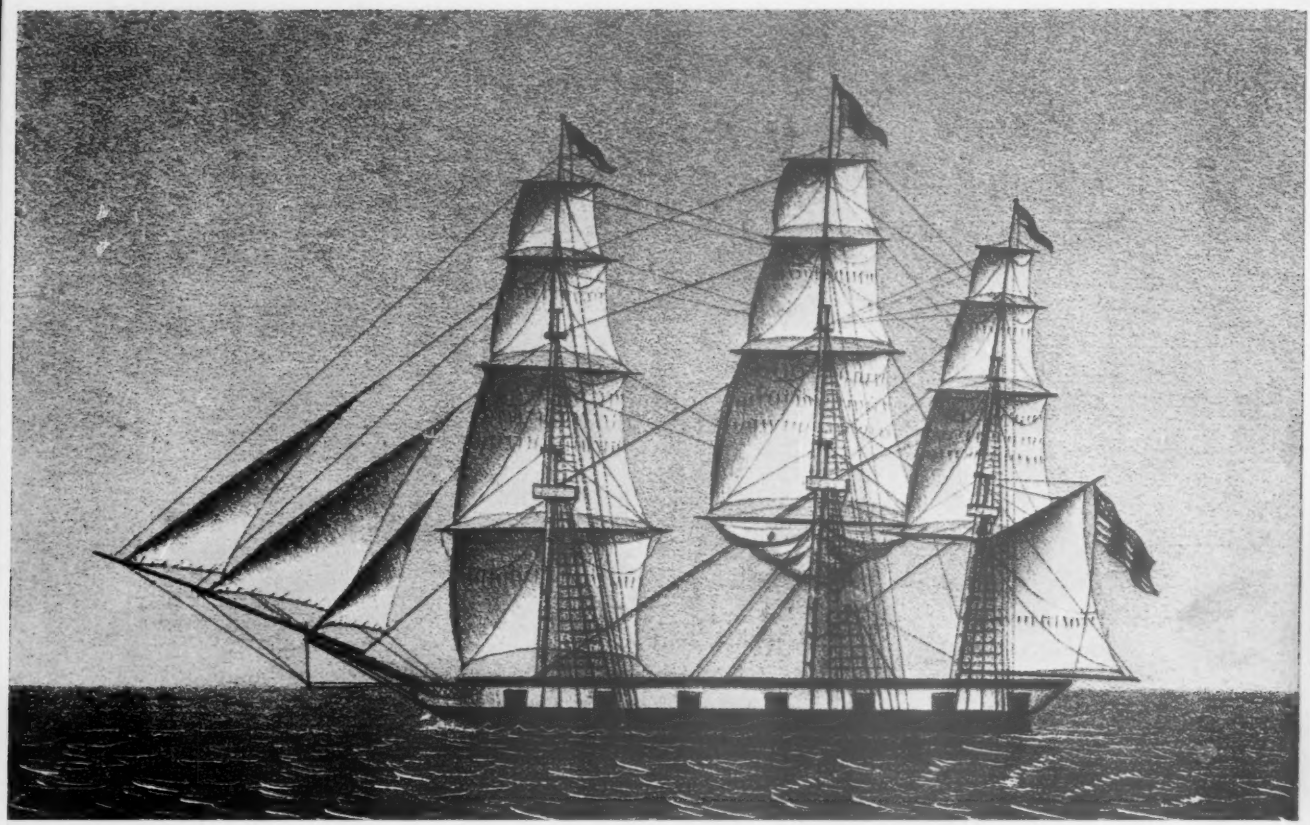
Less than a year after Marchand had been in these waters, England was again represented in Marquesan discovery in the person of Lieutenant Richard Hergest in the *Daedalus*. Like the Spaniard Mendaña, the English Cook, and the American Ingraham, Hergest's voyage was primarily for exploration and discovery. Hergest's ship was one of three in an expedition whose purposes and fame were not primarily in South Pacific affairs but rather in North American, for his was the store ship on Captain George Vancouver's expedition to survey the northwest American coast. Vancouver's *Discovery,* and his second ship, the *Chatham,* commanded by Lieutenant W. R. Broughton, sailed before the *Daedalus* and went via the Cape of Good Hope, New Holland (Australia), and New Zealand. The *Daedalus* had sailed around Cape Horn and, according to schedule, rendezvoused with the other two at Monterey. When Vancouver met the *Daedalus* there he found it under the command of the Master, and learned that Hergest, his astronomer, and a sailor had been killed on Oahu in the Hawaiian Islands. From Hergest's papers Vancouver learned that on March 30, 1792, he had sighted three islands: Ua Huka, which he named "Rious," Hua Pou, which he called "Trevenens," and Nuku Hiva, which he named "Sir Henry Martin's Island." Later he named the rocky islets of Motu Iti "Hergests Rocks," after himself, and the two islands of Eiao and Hatutu he called "Roberts Islands." Vancouver, like Hergest, knew nothing of Ingraham's and Marchand's visits the previous year, and supposed the islands to be new discoveries; he named the whole group "Hergests Islands."

The next voyage was of a commercial nature, and like his recent predecessors, Josiah Roberts, in the *Jefferson* from Boston, did not know of the previous discoveries. Roberts was heading for the northwest coast, too, and he carried in his ship the materials to build a schooner in the Marquesas. He arrived at Tahu Ata (Mendaña's "Santa Christina") in November, 1792, and stayed more than three months in Resolution Bay while building his schooner. Roberts became well acquainted with the natives and from them learned of the existence of the islands to the northwest. When his new ship was ready, Roberts sailed for Hua Pou which he named "Jefferson" after his own ship, and the small island off Hua Pou (Motu Oa) he named "Resolution" after his new schooner which had been given the name of the bay in which it had been built (and the bay had been named for Cook's ship, the

"Resolution Bay in the Marquesas"
James Cook, A Voyage towards the South Pole, and round the world . . . in the years 1772, 1773, 1774, 1775. London. 1777.

Resolution). Nuku Hiva he labeled "Adams" (remember that Ingraham had given this name to Hua Pou); Ua Huka was designated "Massachusetts" while Motu Iti was named "Blake Island." While sailing among these islands Roberts had a native of Nuku Hiva with him, and this old man gave Roberts the native names of the islands for the first time. This man was left on Nuku Hiva, and Roberts sailed on north and found Eiao and Hatutu on March 3, 1793, and called them "Freeman" (one source says "Freemantle") and "Langdon," respectively. To the whole group of northwestern islands, Roberts gave the term Washington Islands.

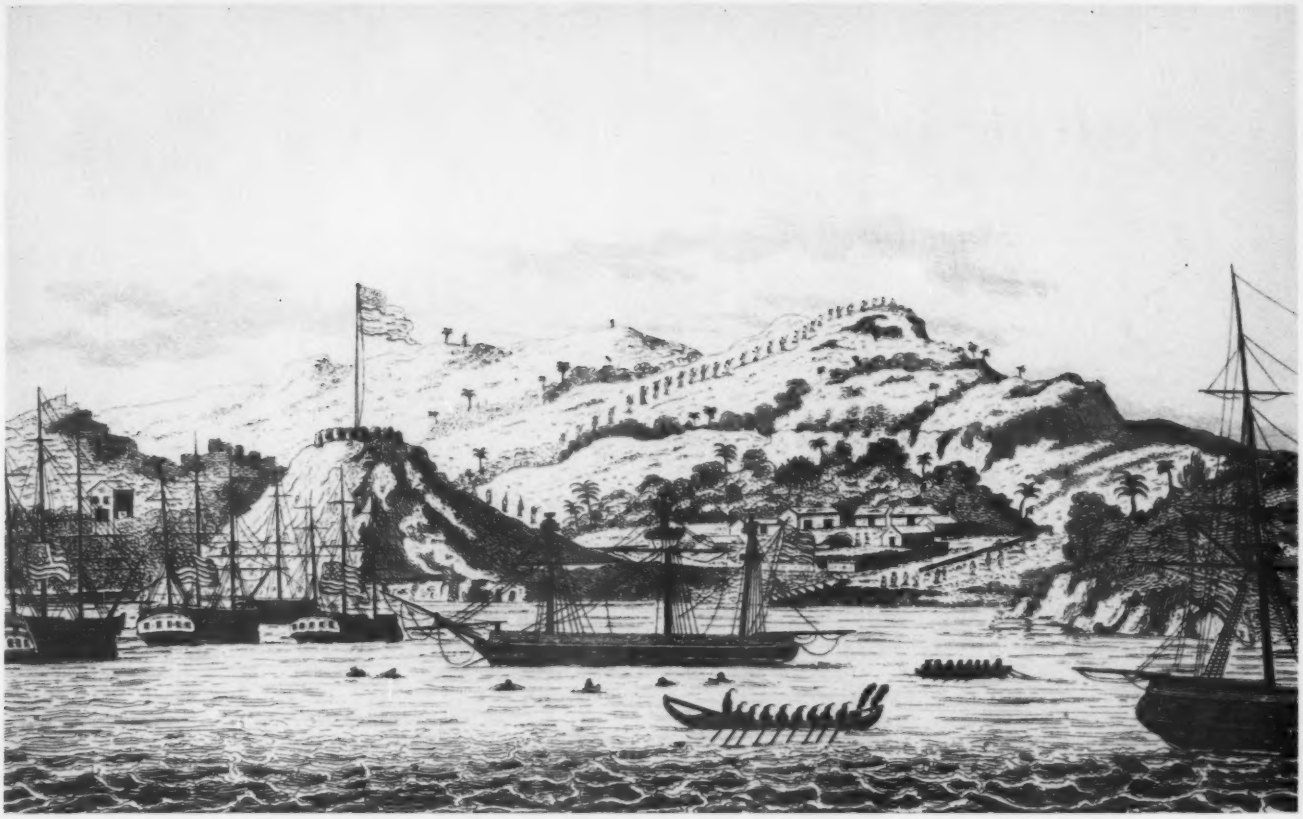
The next voyage was also an American one: that of Captain Edmund Fanning in the *Betsey,* owned by Mr. Elias Nexsen of New York, and sailing from Stonington, Connecticut. Fanning was after fur seals, which he found in abundance at Masafuero Island (in the Juan Fernandez Islands). After loading his ship he sailed for the Marquesas for refreshments. At Tahu Ata he found the missionary William Crook who had been left there the year before (1797) by the missionary ship *Duff.* Crook had found the Marquesans rather unfriendly and beseeched Fanning to take him off the island. He told Fanning of the four large islands to the north which had been named Washington Islands (by Roberts). Fanning sailed to this group in the hopes of getting more fresh food. He succeeded at Nuku Hiva with Crook's help; apparently the latter thought these natives more hospitable since he left the *Betsey* and remained there. Fanning sailed on north and, after he had found the four islands mentioned by Crook, and then found two more, he thought they were new discoveries and christened Eiao "New York" and Hatutu "Nexsen" after the owner of his ship. (Fanning continued sailing north and west and truly discovered two small, uninhabited, isolated islands: Fanning, which he named for himself, and Washington, named for the first president of the United States. He also sighted, but did not name, Palmyra Island, which was named in 1802 by Captain Sawle after his ship. Fanning went on across the Pacific, unloaded his fur seal cargo at Macao and acquired one of tea, silk, nankeen, and chinaware which he took back to New York via the Cape of Good Hope. He reached New York on April 26, 1799, and he reported in his account of the voyage that his round the world expedition had a profit of $52,300.)



"The Betsey Returning into Port"
Edmund Fanning, Voyages Round the World . . . New York. 1833.

The last mariner to be involved in this confusion of naming the Marquesas Islands was Captain David Porter, and his story is a rather interesting one too. During the War of 1812 Porter had command of the frigate *Essex* and his mission was to harass British shipping. After considerable success in the Atlantic he rounded Cape Horn—without orders—continued his harassing and finally made for the Marquesas for fresh supplies with a flotilla of captured ships in tow. Porter must have been flushed with his successes and carried away by the spirit of war. He landed at Nuku Hiva, camped ashore and made friends with the natives. He assisted them in their own little war campaigns with each other, and when native affairs became rather messy he decided to take possession of the island. This he did on November 19, 1813 in a formal declaration, which was published by his biographer, Archibald Douglas Turnbull, in *Commodore David Porter 1780-1843*. The declaration commences and reads in part:

> It is hereby made known to the world that I David Porter a captain in the navy of the United States of America and now in command of the United States frigate the Essex, have on the part of the said United States taken possession of the island called by natives Nookaheebah, generally known by the name of Sir Henry Martin's Island, but now called Madison's Island [for President Madison]. That by the request and assistance of the friendly tribes residing on the mountains, whom we have conquered and rendered tributary to our flag, I have caused the village of Madison to be built consisting of six convenient houses, a rope walk, bakery and other appurtenances, and for the protection of the same, as well as for that of the friendly natives, I have constructed a fort calculated for mounting sixteen guns whereon I have mounted four, and called the same Fort Madison.
>
> . . . . . .
>
> . . . and that the act of taking possession was announced by a salute of seventeen guns from the artillery of Fort Madison, and returned by the shipping in the harbor, which is hereafter to be called Massachusetts Bay. And that our claim to this island



"Madisonville in Massachusetts Bay—Essex & Her Prizes"
David Porter, A Voyage in the South Seas . . . in the Frigate "Essex" . . . London. 1823.

> may not be hereafter disputed, I have buried in a bottle at the foot of the flagstaff in Fort Madison, a copy of this instrument together with several pieces of money, the coin of the United States. . .

The bottle was dug up a year later. Many of the natives gave allegiance to the United States, the island was subdued, and Porter sailed away in search of more glory, leaving three of his prizes and some prisoners in charge of a few of his men. An English resident of the island, who had assisted Porter as an interpreter, didn't like the new turn of affairs, led the natives in a revolt, and murdered some of the remaining Americans. A few of them escaped and sailed to Hawaii. There, by a twist of irony, they were captured by the same British frigate that a few weeks earlier had caught up with the dashing Porter and helped capture him and the *Essex*. Even if Porter's career was sometimes a bit too flamboyant for his superiors' liking, he served his country well in more ways than one, for in his household were two future admirals of the U. S. Navy, his own son, David Dixon Porter, and an adopted son, David Farragut.

The United States never ratified Porter's annexation, and the only people who contested France's annexation of the whole group thirty years later were the natives who resisted so fiercely on the island of Hiva Oa that it acquired the nickname of Bloody Hiva Oa.

So ends the rather complicated story of the early history and naming of the Marquesas Islands. Who bestowed a few other names, like the title "Isle of Barking Dogs" on Motane, or "Gunner's Quoin" on Motu Oa is not known, and we have not considered the alternate native names, nor alternate spellings. In the following summary of this variety of names, the current names are given first.

North-west or Washington Group: Isles de Revolution, Hergests Islands:

Hatutu: Fatuuhu, Fetouhouhou, Hancock, Chanal, Langdon, Nexsen.

Eiao: Hiau, Knox, Freeman or Freemantle, Roberts, New York, Masse.

Motu Iti: Motuiti, Franklin, Les Deux Frères or Two Brothers, Hergest Rocks, Blake.

(Continued on page 34)

The Red Stela, reconstructed, as far as possible, from the available fragments, set up in the Expedition camp. It is of very hard limestone, the sides and front originally painted red. Of the figure on the front, little more than the feet, placed heel to heel, remains. There is a long glyphic inscription, but the date is missing. Style dating indicates that the stela is early rather than late.

The Temple of the Red Stela

An important new monument is unearthed at the Maya city of Tikal in Guatemala.

Edwin M. Shook

Archaeological digging is a good deal like prospecting—you never know when and where you are going to strike paydirt. Most discoveries are the result of careful planning but occasionally the excavator is blessed with good luck. Whichever factor is responsible, these unpredictable finds prevent archaeology from becoming routine cut-and-dried research, and serve to stimulate and hold the interest of both workmen and staff in the field.

The third University Museum expedition to the jungle-shrouded Maya ruins of Tikal in Guatemala began excavation there late in January 1958. Long, arduous preparation had preceded this stage of the Tikal Project. Camp facilities were well enough established to house and feed the large labor force and staff required on the dig. Now, we were ready to excavate—a stage we had worked so hard to reach—to uncover the long-buried remains of an aboriginal civilization which so brilliantly flowered and then died some ten centuries ago.

Week after week, we patiently removed the detritus of masonry stairs, terraces, and temple walls—the result of centuries of exposure to the tropical rains and fast-growing plant life. We mapped, photographed, and recorded in field books the observed surface features. The crumbled remains of root-disturbed plaza and terrace floors were delicately brushed by hand—these same floors which once had felt the tread of Maya priests, civilian elite, and commoners. Artifacts of stone, shell, bone, pottery, and other material which had withstood the ravages of time received meticulous attention. All these form the hard core of archaeology. They provide the evidence needed to solve the mysteries of the Lowland Maya—the people who last occupied the metropolis and whose ancestors over centuries and centuries had built Tikal from a hamlet to the greatest of all Maya cities.

These daily activities fully occupied the laborers and staff. It was slow methodical work. We were prospecting. The strike came unexpectedly one hot afternoon in early March. For three days several of our men had been clearing the debris-choked rooms of Structure 34, one of the sixteen temples on the Northern Acropolis. The men worked steadily, as I could see from the plaza below by the puffs of dust rising from each shovelful of dirt they threw out. It was time to make a routine check of the excavation. However, the heat and a series of camp problems had sapped my energy. The climb up the steep-sided pyramid to the temple was not appealing. Bill Coe and Dick Adams, who were digging nearby, kindly offered to have a look. They climbed Structure 34 and disappeared in the rear chamber. The next moment out popped Bill frantically waving his arms and shouting, "Ed, come quick." I didn't know what had happened. Had one of the men been killed by a falling rock? Had Dick been bitten by a snake? I scrambled up the pyramid slope in record time. There was the strike! Paydirt! A new stela, one side partly uncovered showing magnificently carved hieroglyphs and painted a brilliant red. The clamor raised by Bill and my mad dash up the pyramid brought all the other workmen on the run from nearby jobs. They crowded into the room to find the cause of all the excitement. Our enthusiasm was contagious, flagging interest revived, and the whole camp was stimulated by the new discovery.

The first glimpse of the red-painted stela, the twenty-sixth sculptured one found in Tikal up to that time, clearly showed that the monument had been broken in ancient times. Stela 26 represents another important example, like Stela 23 and

The Northern Acropolis at Tikal. Always the first task is the removal of the heavy jungle growth covering the area to be excavated. The building in the center is the Temple of the Red Stela.

Stela 25 reported last year in the *University Museum Bulletin,* of ancient monument breakage at Tikal.

Structure 34, now called "The Temple of the Red Stela" because of the new find, was selected for the initial excavation of the 1958 field season because it is a relatively well preserved and typical example of Early Classic Maya architecture. It is the third of four temples from east to west, which face directly southward on the Great Plaza. These four form the southern edge of the Northern Acropolis—a huge terraced sub-structure supporting a compact group of sixteen temples of different sizes and heights. They appear small, dwarfed as they are by the towering Temple of the Giant Jaguar (Great Temple I) and Temple of the Masks (Great Temple II), but range in height from approximately ten to thirty meters above the Great Plaza. They look like early models for the later great temples. The Maya obviously held this cluster of sixteen temples in high esteem. They erected a multitude of both plain and carved stone monuments and altars on the plaza at the foot of the terrace stairway, on the terrace in front of five of the sixteen temples, and in the rear chamber of the one temple so far excavated. We have, at present, knowledge of 16 carved and 27 plain stelae, together with 4 carved and 22 plain altars, associated with the Northern Acropolis. These

Principal surviving fragments of the Red Stela as found near the back wall of the rear room of the temple. The rule at the left measures twenty inches.

stelae represent over 59% of the carved and 34% of the plain stelae known in Tikal.

The Temple of the Red Stela consists of three chambers, one behind the other, and each with a single, centrally placed doorway. Most of the temple's vaulted ceiling had collapsed except a few sections in the two back rooms. Crumbled masonry, plaster, and modeled stucco largely filled the rooms. The modeled stucco, painted red, probably fell from the decorated facade of the roofcomb, a small part of which still remained over the rear wall. It was while clearing the six-foot depth of debris from the back room that the workmen discovered Stela 26. Heretofore, pick, shovel, trowel and whiskbroom had been employed, but once the stela came to light only small tools and paint brushes could be used. Weeks of exciting work followed, each scoop of dirt revealing something new, changing the picture we had postulated at the beginning. To further confuse us, as in most archaeology, we had to observe the physical evidence in reverse order of the momentous events which had taken place in the Temple of the Red Stela. The main sequence, but only tantalizing glimpses at that, could be reconstructed after completion of the meticulous excavations. Additional details must await the results of laboratory analysis of the charcoal, pottery, and various artifacts associated with Stela 26.

However, an outline of major events may be stated with a fair degree of accuracy. The three-room Temple of the Red Stela was erected during the latter half of the Early Classic Period. This is demonstrated by the type of masonry in the temple walls and the style of achitecture. Also, two carved and two plain Early Period monuments stand at the base of the temple's stairway. One of them is dated and apparently in original position. Whether the newly discovered Stela 26 was set up and carved in place at the time the temple was erected we were unable to ascertain, due to the later disturbance by the Maya. It had originally been erected against the wall of the back room opposite the central doorway. It stood, majestic and awe-inspiring in the inner sanctuary with an elaborately costumed human figure on the front and the two sides handsomely carved with double rows of hieroglyphs. The carved surfaces, visible to only a few worshippers at a time, had been painted bright red. In front of the monument the fire-blackened temple floor provided mute evidence of the reverence paid to the person—priest, ruler, or deity—sculptured on the stela front. How long did the sanctity of this temple with its red stela last? Years, scores of years, or centuries? The answer may be forthcoming through style dating of the sculpture and from radiocarbon analysis of the charcoal recovered below the base of the monument.

The next event in the history of the Temple of the Red Stela was drastic in the extreme. The magnificent monument was ruthlessly broken. Large sections were knocked from the upper half and the delicately carved details of the principal figure hammered into hundreds of chips. These, and many larger fragments, lay around the stela base and well down in a crater-like hole cut through the temple floor, though others were missing. Also, the stela butt had been pulled or pushed forward and its highest fractured edge chipped off.

Subsequently, the Maya seem to have attempted appeasement of the gods for this desecration. They heaped some of the larger monument fragments as well as the many small chips around the toppled stela base. Within this stone pile, and in three separate cache pits dug through the temple floor, they placed rich offerings of highly valued material. Perhaps the deposition of these exotic objects was the culmination of some important ceremony relating to the desecrated red stela. Workmen then sealed the three floor pits containing offerings and built a rectangular masonry altar directly over them, thus burying the stela butt and the heap of fragments and offerings around it. The masonry altar, faced with re-used cut stone and roughly plastered, lay against and centered on the back wall opposite the temple doorway.

(Opposite) Details of glyphs on the left side of the Red Stela. Fine incised detail is frequently lost on Maya sculpture, but here it is remarkably well preserved because the stela surface was protected by the debris under which it was buried in the temple.

The building of the altar marked another phase in the life of the Temple of the Red Stela. We recognize it from the evidence recovered and can separate the earlier from the later events. The temple continued to be the scene of much activity. Smoke from ceremonial fires blackened the plaster on the altar. We discovered a sealed cache of pure charcoal in the temple floor before the masonry altar. How long the temple served as a place of worship, we do not know, but the amount of burning concentrated in front and around the altar does suggest that it functioned normally for some time. We think it a sufficient number of years for the people and priests to forget that the masonry altar concealed a mutilated treasure—the red stela of their ancestors.

Finally, another action took place here which we find most difficult to understand. More desecration! The smoke-blackened masonry altar was partly torn down, thus revealing to the wreckers (or were they looters?) broken fragments of the beautifully carved and red-painted monument with offerings of marine material and fine stone objects. This discovery, still in ancient times we believe, may have startled the finders. They only ripped off a part of the altar. Their wreckage lay scattered around the back room on or just above the temple floor. We also found one fitting fragment of the stela in the debris of the front room. Even more puzzling was their next action. Upon the ruined altar and around the exposed stela, they apparently heaped wood and set the pile on fire. The residue of ash and charcoal from the fire or fires covered the area around and over the altar. Mingled with the ash, charcoal, and debris scattered by the wreckers, we recovered incomplete pottery censers, polychrome vessels and drums, and objects of bone, shell, and stone.

We could detect no further evidence of human activity in the Temple of the Red Stela following

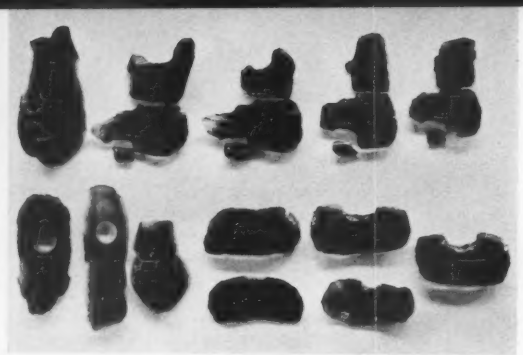
The Northern Acropolis and the Temple of the Red Stela. Excavated debris from the temple rooms flows down beside the ruined stairway, not yet excavated. At its foot, workmen are preparing to raise one of four stelae.

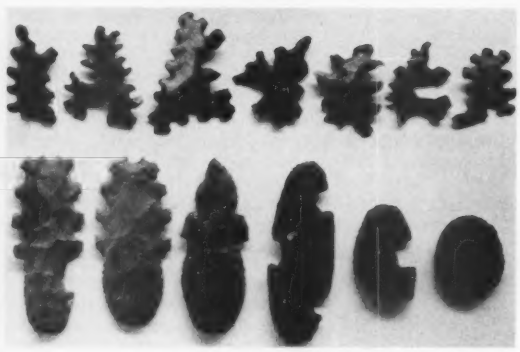
The Red Stela was moved from the temple to the camp to facilitate reconstruction, to assure its preservation, and for photographing. Here, the heavy, largest fragment, crated to prevent further damage, is being skidded down the slope.

the destruction and burning. Seemingly the temple, and perhaps even the whole city of Tikal, was abandoned. Slow destruction by the elements followed. The wooden lintels over the temple doorways rotted. Most of the masonry vault and roofcomb fell, deeply burying here for a thousand years the strange, almost incredible story of human behavior. In 1958 men and tools of another age revealed again some of the successes, falterings, and strivings of the Maya.

Once we had cleared the temple rooms, we observed a number of circular cuts in the original floors. Several of these cuts were unsealed, others had been refloored with lime mortar similar but not quite the same as the original floor. We investigated each disturbance. The circular cuts proved to be pits dug through the floor, some for only a few inches, others to a depth of eighteen inches. The unsealed pits contained soft earthy material, bits of charcoal, and a few potsherds. The sealed ones, previously mentioned as containing caches placed at the time the masonry altar was built, held a surprising array of treasures. Three pits contained an enormous amount of exotic marine material—sponges, coral, seaweed, sea shells, stingray spines, fish vertebrae, and other strange marine objects. Further emphasizing the importance of coastal products to the inland Maya of Tikal, there were numerous imitation stingray spines fashioned in miniature from bone. Just as significant by their quantity in the pits were incised and eccentric obsidians, obsidian flake blades, and eccentric flints, some of these beautiful objects being among the finest ever discovered. Other choice items include a mosaic plaque of jade and crystalline hematite mounted on a backing of mother-of-pearl shell, miniature balls of white stone and obsidian, red paint, tiny fragments of jade, and a clay head of a Maya god. These fabulous offerings, virtually duplicated by others from next to the stela base inside the masonry altar, were associated with as yet unidentified plant fibres.

Practically all the contents of these floor and altar caches, with the possible exception of flint artifacts, represent imports from widely separated sources. Some marine material came from the far-off Pacific Ocean, some from the less distant Atlantic coast. Jade, obsidian, crystalline hematite and red paint are products of the Highlands of Guatemala. All of these items evidently had been selected because of their rarity, beauty, and appropriateness as temple offerings.





(Top left) Vivian Broman of the Expedition staff in the camp laboratory repairing stingray spines from the caches associated with the Red Stela. In the tray in the background are eccentric flints and obsidians; on the table are sherds and organic remains. (Bottom left) Jadeite mosaic elements apparently once mounted on a mother-of-pearl backing. Note the tiny human feet at the center of the bottom row. (Top right) Among the incised obsidians are types previously unknown. Particularly remarkable are the four heads of gods; after they were incised, each was carefully cut into three pieces. (Bottom right) Some of the eccentric flints.

However much we ponder human behavior in the past from the limited evidence remaining in an archaeological context, we still wonder how near the truth we really come. The excavation of Stela 26, its temple, its caches and altar, provided one surprise after another. It raised questions of man's behavior in Tikal which the staff discussed in long sessions around the dinner table and in the laboratory while washing, cataloguing, and photographing the specimens. Why so many richly stocked caches of essentially the same material? Had this great quantity of offerings been looted by the Maya from an earlier cache or burial and redeposited where we found them? Why the emphasis on marine products, some of these never before found in ancient Maya religious offerings? What caused the outburst of violence in Tikal, one manifestation of which was the brutal smashing of a superbly carved monument?

The mutilation of Stela 26 would seem not to be the spontaneous action of a mob. It was purposeful breakage. A considerable effort and some time were required for the vandals, working only with stone tools, to break up this shaft of limestone which weighed over a ton. Also, the limited space within the temple's back chamber prevented more than a few violators from entering at one time. The perpetrators of this deed were not content merely to break the monument into large pieces. They intentionally flaked off most of the principal figure. No such flaking showed on the glyphs on the sides of the stela that we recovered; here, the only damage to the glyphs was that caused by the initial breakage of the stela into large fragments. Were the people venting their anger towards the individual carved on Stela 26?

This is but one example of ancient breakage of monuments at Tikal, all dating from the early period. Often the Maya re-erected a piece of the broken stela, either the upper or lower part, sometimes backward and once upside down. These data raise a host of questions, none of which we can answer at the present time. We are just beginning to probe the rich mine of knowledge hidden so long beneath the ruins of Tikal. What will the next stroke of the excavator's pick reveal?

THE AUTHORS

RODNEY S. YOUNG ("The Gordion Tomb"), Curator of the Mediterranean Section of the University Museum since 1949, initiated the excavation of Gordion in 1950. Since that time he has divided his time between his duties in the Museum, teaching in the University of Pennsylvania, and the direction of the Gordion Expedition. In 1953, he headed a reconnaissance expedition for the Museum to Afghanistan. Between 1933 and 1949, Dr. Young was an Agora Fellow, later a Fulbright Fellow, at the American School of Classical Studies in Athens (except for an interlude for Government service during the war), where his particular interest was in the study and publication of Early Iron Age material. He has published numerous articles in his field in *Hesperia* and the *American Journal of Archaeology*.

MARIANNE L. STOLLER ("Te-moana-nui-o-Kiwa") did field work in New Zealand and the Society Islands in 1951-53 and was an assistant in the American Section of the University Museum 1954-56. She is a Fellow of the American Association of University Women and a Fellow of the Social Science Research Council, and is now working on her Ph.D. dissertation in the Department of Anthropology of the University of Pennsylvania. Her subject is early European contacts in some of the islands of Polynesia and in the course of her work she deals extensively with the reports of the early voyages.

EDWIN M. SHOOK ("The Temple of the Red Stela") has been Field Director of the Tikal Project of the University Museum and the Government of Guatemala since its beginning in 1956. He has been doing archaeological exploration and excavation in the Maya area of Mexico, Guatemala, and Honduras since 1933, for much of that time as a staff member of the Carnegie Institution of Washington from which he is at present on leave. His most important field work was at Uaxactun, Kaminaljuyu, and Mayapan. His reports on these and other sites have appeared in the Carnegie series of publications.

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TE-MOANA-NUI-O-KIWA

(Continued from page 25)

Nuku Hiva: Nukuhiva, Nookaheevah, Federal, Ile Baux, Adams, Sir Henry Martin's, Madison Island.

Ua Huka or Huahuna: Ooahoona, Ouahouka, Roahouga, Washington, Rious, Massachusetts.

Hua Pou or Ua-Pou: Uapa, Uapu, Uapora, Huapu, Ouapou, Roapoua, Roapua, Adams, Trevenens, Marchand, Jefferson.

Motu Oa: Motuoa, Lincoln, Ile Plate, Flat, Resolution, Gunner's Quoin.

South-east or Mendaña Group:

Fatu Huku: Fatuhuku, Fetuku, Fatouhoukou, Fetohongo, Hood's.

Hiva Oa: Ohiva-Hoa, Oniva-Hoa, La Dominica.

Tahu Ata: Tahuata, Tauata, Santa Christina, Santa Cristina or Cristina.

Motane: O-nateaya, Mohotane, San Pedro, Isle of Barking Dogs.

Fatu Hiva: Fatuhiva, Santa Magdalina or Magdalena.

All of this for a group of islands whose collective land area totals four hundred and ninety-two square miles!

Museum News

HASANLU, IRAN

Mr. Dyson's expedition has made important discoveries. He writes that in the course of work on the city wall of the late 9th century "one fine morning while the Director was crouching in a hole laboriously picking out tiny pieces of eggshell inlay Cuyler [Young] appeared over the edge from another room with a big grin on his face. 'What do you think of this?' he asked, handing me a tall dirty-looking object. Its seven inches height indicated something unusual—then it dawned! A silver cup, conical in shape with a flat bottom—and covered with two rows of small figures applied in electrum! . . . Closer inspection shows . . . the scenes obviously symbolize a battle and a victory of some sort but with people of a type not heretofore seen in representational art in Iran.

"Two days after this happy discovery one of the workmen called the Director over to the small room which was later dubbed the 'Bone Room' because of all the ash and bones found in it. Here he had come upon the arm of a man leaning against the wall and crushed under the collapsed roof. Along the arm lay a sheet of yellow dust to which had been attached rows of round copper buttons—as a kind of protective armour. Intent upon recording as much detail of the clothing as might be preserved the Director took over the job of clearing. After working for about an hour a small gold piece appeared unexpectedly next to the wall . . . Imagine the surprise when instead of a bracelet [as we had first supposed] an edge of gold began running down into the soil for eight inches! Cuyler was working late in another room clearing a Parthian Cist burial and only Charles Burney was watching. 'Is it decorated?' he asked. A sweep of the brush indicated that it was indeed decorated. Excitement mounted. We now visualized a small decorated cup of some sort. But no. Out of the soil emerged a large bucket-shaped vessel, pressed flat by the weight of the earth, eight inches high and two feet in diameter! And shining in golden splendor as only gold—the one non-corroding metal—can do. What a fabulous treasure—covered with mythological figures in detail and composition completely new to us.

"Upon arrival at the house the men set up a cheer and our Inspector Assefi's eyes were like two sunbursts. Everyone stared with disbelief. Then came the problems. How to ensure security of the priceless object? The news swept the country—the next day in Nagadeh they were telling that we had found a solid gold throne—and two days later in Khaneh it was reported that we had found the king's solid gold desk! Before we could even return to the mound children from the village were there poking around. Cuyler was dispatched immediately to the gendarme post for guards and we settled down to ten days of night and day patrol with a tent on the mound and two armed guards walking about discouraging visitors. The story is now told in the next village that a great serpent lives in the mound and that it is unsafe at night—also that we have gone to Tehran for a bomber to kill it! The 'Baby' as the treasure soon was called resided in a small overnight case which we toted from room to room depending on where and who was doing what. Mr. Assefi and Mr. Burney both began a marathon drawing competition to record the details as accurately as possible in order to free the Baby for deposit in the bank vault at Rezaiyeh—where it now resides in lonely splendor."

TIKAL, GUATEMALA

Mr. Aubrey S. Trik is now engaged on the preliminary work of drawing up plans and assembling equipment for the restoration of selected buildings at Tikal. These will include the Temple of the Red Stela. Mr. Trik's previous experience in the restoration of Maya sites includes Copan, under the auspices of the Carnegie Institution, and Zacaleu for the United Fruit Company.

GORDION, TURKEY

Dr. Edwards has been clearing the upper levels of the city mound, preparatory to deeper digging next year. His most interesting discovery has been pottery kilns of the Hellenistic period, with some moulded terracotta figurines which had not been baked. Miss Mellink has done further work on the minor mound, clearing more of the fortifications of the Lydian period (seventh-sixth century B.C.). These prove to be as extensive as had been anticipated, and in a fair state of preservation. The Turkish authorities have not yet solved the problem of the preservation of the wooden tomb cleared last year but they continue to work on it, and steps will be taken in the near future to prevent any further deterioration or collapse.

The decree granting the loan of Gordion objects for temporary showing in the United

States has been passed by the Turkish Government and ways and means of getting them here expeditiously have been considered. We hope to have them in the Museum in late October.

ST. LAWRENCE ISLAND

Mr. Robert Ackerman with a crew of two Eskimos and a skin boat is making an archaeological reconnaissance along the south coast of St. Lawrence Island in the northern Bering Sea. This continues the University Museum's archaeological research in the Arctic and is primarily concerned with the discovery of Paleo-Eskimo sites which have been dated by the Museum's C-14 laboratories at about A.D. 300. There are no Eskimo living on the south coast of St. Lawrence Island today and the area has never been thoroughly explored. St. Lawrence is geographically and ethnographically Siberia; hence, our research there relates to that now being carried out by the Russian scientists in eastern Siberia.

HOW IS YOUR MUSEUM I.Q.?

Answers to quiz on page 14:

1, c; 2, b; 3, d; 4, a; 5, a.

EDITORIAL *(Continued from page 2)*

thousands of generations and as a part of the organic world, can lead to that intellectual integrity so necessary in contemporary society.

Just as new nations seek out and recover an historical tradition to give political cohesion and meaning to a specific society so, I hope, mankind as a whole may find a common tradition and a common meaning in the great epic of humanity. I like to believe that there is some unconscious feeling in the flesh and the minds of my contemporaries which now impels them to seek a meaning in the whole history of man, not alone in historical tradition of their own particular society. I also like to think that this is the reason for the current enthusiasm for knowledge of man's ancient past.

Physical scientists may be unintelligible to the public and yet produce results which are concrete and understandable. In archaeology and anthropology, as in all the humanities, results are only in the minds of men. To have significance these studies must now be intelligible to millions. It is our problem to find a way of speaking to these millions.

FROELICH RAINEY

7 November - 24 December 1958

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A loan exhibition from the Government of Guatemala, supplemented with selected Maya pieces from museums and private collections in America.

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